by Applicant (Use several sheets if necessary)

Michael A. Apicella et al.

Filing Date

September 19, 2003

Group Art Unit, 1642 1645

(37 CFR §1.98(b))

 Γ

	•		U.S. Pate	ent Documents			
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
A	AA	4,533,630	08/06/85	Wilkins et al.			
1	AB	4,554,101	11/19/85	Норр			
	AC	4,559,157	12/17/85	Smith et al.			
	AD	4,608,392	08/26/86	Jacquet et al.			
	ΑE	4,820,508	04/11/89	Wortzman			
	AF	4,873,192	10/10/89	Kunkel			
	AG	4,938,949	07/03/90	Borch et al.			
. 2	АH	4,992,478	02/12/91	Geria			

	Foreig	n Patent Doc	uments or F	ublished Foreign	Patent A	Application	าร	
Examiner	Desig.	Document	Publication	Country or			Translation	
Initial	ID	Number	Date	Patent Office	Class	Subclass	Yes	No
B	ΑI	0 184 187	06/11/86	EPO	:			
	AJ	WO 99/24578 -	05/20/99	PCT				
	AK	WO 99/57280 -	11/11/99	PCT				
	AL	WO 98/02547 •	01/20/98	PCT				
PR	AM	WO 00/71725 ·	11/30/00	PCT				

	Other D	ocuments (include Author, Title, Date, and Place of Publication)
Examiner Initial	Desig. ID	Document
B	AN.	GenBank Accession Number B81859
	AO	Alpuche-Aranda et al., "Salmonella Stimulate Macrophage Macropinocytosis and Persist within Spacious Phagosomes," J. Exp. Med., 1994, 179:601-608
	AP.	Altieri, "Occupancy of CD11b/CD18 (Mac-1) Divalent Ion Binding Site(s) Induces Leukocyte Adhesion," J. Immunol., 1991, 147:1891-1898
	AQ	Altschul et al., "Basic Local Alignment Search Tool," <u>J. Mol. Biol.</u> , 1990, 215:403-410
	AR-	Altschul et al., "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs," Nucl. Acids Res., 1997, 25:3389-3402
	AS	Apicella, "Antigenically Distinct Populations of Neisseria gonorrhoeae: Isolation and Characterization of the Responsible Determinants," J. Infect. Dis., 1974, 130:619-625
A.	AT	Batzer et al., "Enhanced evolutionary PCR using oligonucleotides with inosine at the 3'-terminus," Nucl. Acids. Res., 1991, 19:5081

Fire-state of O'country		D : D : : :		_	, , ,	/
Examiner Signature	$2 \cdot (1 - 0) \cdot (1 - 1)$	Date Considered	1		71./	
i l	2 2/20 1835 COV		5	91	UTO	!
	ednaBellar		/ /	71		
EXAMINER: Initials citation code	sidered. Draw line through citation if no	t in conformance an	d not co	nsidere	s. Includ	e copy of this form with
next communication to applicant.						
				Sub	stitute D	isdosure Form (PTO-1449)

Substitute Disclosure Form (PTO-1449)

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17023-031001	Application No. 10/665,990	
1	closure Statement	Applicant Michael A. Apicella et al.		
(Use several sheets if necessary) (37 CFR §1.98(b))		Filing Date September 19, 2003	Group Art Unit 1645	

		ocuments (include Author, Title, Date, and Place of Publication)
Examiner Initial	Desig. ID	Document
		Becherer et al., "Cell Surface Proteins Reacting with Activated Complement Components,"
	AU .	Complement Inflamm., 1989, 6:142-165
- V	AV.	Bessen and Gotschlich, "Interactions of Gonococci with HeLa Cells: Attachment, Detachment,
	Av.	Replication, Penetration, and the Role of Protein II," <u>Infect. Immun.</u> , 1986, 54:154-160
		Bjerknes et al., "Neisserial Porins Inhibit Human Neutrophil Actin Polymerization, Degranulation,
j	AW	Opsonin Receptor Expression, and Phagocytosis but Prime the Neutrophils To Increase Their
		Oxidative Burst," Infect. Immun., 1995, 63:160-167
	ΑX	Cann et al., "Detection of antibodies to common antigens of pathogenic and commensal Neisseria
		species," J. Med. Microbiol., 1989, 30:23-30
- 1	ΑΫ́	Caron et al., "Identification of Two Distinct Mechanisms of Phagocytosis Controlled by Different Rho GTPases," Science, 1998, 282:1717-1721
		Carrea et al., "Purification and properties of two phospholipases D from Streptomyces sp.," Biochim
}	AZ.	Biophys. Acta., 1995, 1255:273-279
		Chen et al., "Heparin Protects Opa* Neisseria gonorrhoeae from the Bactericidal Action of Normal
	AAA	Human Serum," Infect. Immun., 1995, 63:1790-1795
		Christodoulides et al., "Interaction of primary human endometrial cells with Neisseria gonorrhoeae
	ABB	expressing green fluorescent protein," Mol. Microbiol., 2000, 35:32-43
	100	Clarke and Spudich, "Nonmuscle Contractile Proteins: The Role of Actin and Myosin in Cell
1	AÇC	Motility and Shape Determination," Ann. Rev. Biochem., 1977, 46:797-822
	ADD	Clauser et al., "Role of Accurate Mass Measurement (±10 ppm) in Protein Identification Strategies
	ADD	Employing MS or MS/MS and Database Searching," Anal. Chem., 1999, 71:2871-2882
		Clerc and Sansonetti, "Entry of Shigella flexneri into HeLa Cells: Evidence for Directed
	AEE	Phagocytosis Involving Actin Polymerization and Myosin Accumulation," Infect. Immun., 1987,
		55:2681-2688
1		Cohen et al., "Human Experimentation with Neisseria gonorrhoeae: Rationale, Methods, and
	AFF	Implications for the Biology of Infection and Vaccine Development," J. Infect. Dis., 1994, 169:532-
		537
	AGG	Colley et al., "Phospholipase D2, a distinct phospholipase D isoform with novel regulatory
		properties that provokes cytoskeletal reorganization," Curr. Biol., 1997, 7:191-201
	АНН	Cooper, "Complement evasion strategies of microorganisms," Immun. Today, 1991, 12(9):327-331
1	АП	Corpet, "Multiple sequence alignment with hierarchical clustering," Nucl Acids Res., 1988,
		16:10881-10890
- 1	AJJ	Dayhoff et al., "A Model of Evolutionary Change in Proteins," Atlas of Protein Sequence and
	· · · · · ·	Structure, Natl. Biomed. Res. Found., 1978, pp. 345-352
}	AVV	de la Paz et al., "Effect of sialylation of lipopolysaccharide of Neisseria gonorrhoeae on recognition
- 1	AKK	and complement-mediated killing by monoclonal antibodies directed against different outer-
	 	membrane antigens," Microbiology, 1995, 141:913-920 Dehio et al., "The role of neisserial Opa proteins in interactions with host cells," Trends Microbiol.,
(ALL	1998, 6:489-495
	 	Densen et al., "Dissemination of Gonococcal Infection is Associated with Delayed Stimulation of
122	AMM	Complement-Dependent Neutrophil Chemotaxis In Vitro," <u>Infection and Immunity</u> , 1982, 38:563-
	'""	572

Examiner Signature		Date Considered .	0/1/
,	b D.01 A	51	9186
	Rodna Bellar	1	
EXAMINER: Initials citation con-	Idered. Draw line through citation if no	ot in conformance and not considere	d. Include copy of this form with
next communication to applicant			

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office		Application No. 10/665,990	
by Ap	closure Statement	Applicant Michael A. Apicella et al.		
(Use several sheets if necessary) (37 CFR §1.98(b))		Filing Date September 19, 2003	Group Art Unit 1642 1645	

Examiner	Desig.				
Initial	ID ID	Document			
	ANN.	DiPaolo et al., "Cellular and Molecular Alterations in Human Epithelial Cells Transformed by Recombinant Human Papillomavirus DNA," Crit. Rev. Oncogen., 1993, 4:337-360			
	A00.	Dramsi and Cossart, "Intracellular Pathogens and the Actin Cytoskeleton," Annu. Rev. Cell Dev. Biol., 1998, 14:137-166			
	APP	Draper et al., "Scanning electron microscopy of attachment of Neisseria gonorrhoeae colony phenotypes to surfaces of human genital epithelia," Am. J. Obstet. Gynecol., 1980, 138:818-826			
	AQQ	Dudas and Apicella, "Selection and Immunochemical Analysis of Lipooligosaccharide Mutants of Neisseria gonorrhoeae," Infect. Immun., 1988, 56:499-504			
	ARR	Edwards and Apicella, "The role of lipooligosaccharide in Neisseria gonorrhoeae pathogenesis of cervical epithelia: lipid A serves as a C3 acceptor molecule," Cell. Microbiol., 2002, 4:585-598			
	ASS	Edwards et al., "A co-operative interaction between <i>Neisseria gonorrhoeae</i> and complement receptor 3 mediates infection of primary cervical epithelial cells," Cell. Microbiol., 2002, 4:571-584			
-	ATT	Edwards et al., "Complement Receptor Type 3 (CR3) on Primary Cervical Epithelial Cells Serves as a Receptor for Neisseria Gonorrhoeae," Abstracts of the 101st General Meeting of the American Society for Microbiology, 2001, Orlando, FL, p. 303			
•	AUU	Edwards et al,. "The Role of Complement Receptor 3 (CR3) in Neisseria Gonorrhoeae Infection of Human Cervical Epithelia," Cell. Microbiol., 2001, 3:611-622			
	AVV	Elemer and Edgington, "Microfilament Reorganization Is Associated with Functional Activation of α _M β ₂ on Monocytic Cells," <u>J. Biol. Chem.</u> , 1994, 269:3159-3166			
	AWW	Erdei et al., "The role of C3 in the immune response," Immun. Today, 1991, 12:332-337			
	AXX	Evans, "Ultrastructural Study of Cervical Gonorrhea," J. Infect. Dis., 1977, 136(2):248-255			
	AYY	Exton, "New Developments in Phospholipase D," J. Biol. Chem., 1997, 272:15579-15582			
	AZŽ	Fällman et al., "Complement Receptor-mediated Phagocytosis Is Associated with Accumulation of Phosphatidylcholine-derived Diglyceride in Human Neutrophils," <u>J. Biol. Chem.</u> , 1992, 267:2656-2663			
	AAAA	Fijen et al., "The role of Fcy receptor polymorphisms and C3 in the immune defense against Neisseria meningitidis in complement-deficient individuals," Clin. Exp. Immunol., 2000, 120:338-345			
	ABBB	Finlay and Falkow, "Common Themes in Microbial Pathogenicity Revisited," Microbial Mol. Biol. Rev., 1997, 61:136-169			
	ACCC	Finlay and Ruschkowski, "Cytoskeletal rearrangements accompanying Salmonella entry into epithelial cells," J. Cell Sci., 1991, 99:283-296			
	ADDD	Fluhmann, "The Squamocolumnar Transitional Zone of the Cervix Uteri," Obstet. Gynecol., 1959, 14:133-148			
	AEEE	Francis et al., "Ruffles induced by Salmonella and other stimuli direct macropinocytosis of bacteria," Nature, 1993, 364:639-642			
	AFFF	Frank et al., "The role of complement in inflammation and phagocytosis," <u>Immun. Today</u> , 1991, 12(9):322-326			
	AGGG	Fukami et al., "α-Actinin and Vinculin Are PIP ₂ -binding Proteins Involved in Signaling by Tyrosine Kinase," J. Biol. Chem., 1994, 269:1518-1522			
No.	АННН	Gazdar et al., "Characterization of Paired Tumor and Non-Tumor Cell Lines Established from Patients with Breast Cancer," Int. J. Cancer, 1998, 78:766-774			
Examiner Sign	nature	Comments Date Considered 5/7 06			

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17023-031001	Application No. 10/665,990	
	closure Statement oplicant	Applicant Michael A. Apicella et al.		
(Use several sheets if necessary) (37 CFR §1.98(b))		Filing Date September 19, 2003	Group Art Unit 1642 1645	

	Other Do	ocuments (include Author, Title, Date, and Place of Publication)
Examiner	Desig.	Dogument
Initial PD	ID AHI	Document Garcia-del Portillo and Finlay, "Salmonella Invasion of Nonphagocytic Cells Induces Formation of Macropinosomes in the Host Cell," Infect. Immun., 1994, 62:4641-4645
	AJJJ	Goeddel et al., "Synthesis of human fibroblast interferon by E. coli," Nucl. Acids. Res., 1980, 8:4057-4074
	AKKK	Grassmé et al., "Gonococcal Opacity Protein Promotes Bacterial Entry-Associated Rearrangements of the Epithelial Cell Actin Cytoskeleton," <u>Infect. Immun.</u> , 1996, 64(5):1621-1630
	ALLL	Griffin, Jr. et al., "Studies on the Mechanism of Phagocytosis: The Interaction of Macrophages with Anti-Immunoglobulin IgG-Coated Bone Marrow-Derived Lymphocytes," <u>J. Exp. Med.</u> , 1976, 144:788-809
	AMMM	Griffin, Jr. et al., "Studies on the Mechanism of Phagocytosis: Requirements for Circumferential Attachment of Particle-Bound Ligands to Specific Receptors on the Macrophage Plasma Membrane," J. Exp. Med., 1975, 142:1263-1282
-	ANNN	Ha and Exton, "Activation of Actin Polymerization by Phosphatidic Acid Derived from Phosphatidylcholine in IIC9 Fibroblasts," J. Cell Biol., 1993, 123:1789-1796
	A000	Harkness, "The Pathology of Gonorrhoea," Br. J. Vener. Dis., 1948, 24:137-147
	APPP	Harvey et al., "Ultrastructural Analysis of Primary Human Urethral Epithelial Cell Cultures Infected with Neisseria gonorrhoeae," Infect. Immun., 1997, 65(6):2420-2427
P.D.	AQQQ	Harvey et al., "Receptor-mediated endocytosis of <i>Neisseria gonorrhoeae</i> into primary human urethral epithelial cells: the role of the asialoglycoprotein receptor," <u>Mol. Microbiol.</u> , 2001, 42:659-672
	ARRR	Harvey et al., "Immortalization of Human Urethral Epithelial Cells: a Model for the Study of the Pathogenesis of and the Inflammatory Cytokine Response to Neisseria gonorrhoeae Infection," Infect. Immun., 2002, 70:5808-5815
·	ASSS	Hauck et al., "CD66-mediated-phagocytosis of Opa ₅₂ Neisseria gonorrhoeae requires a Src-like tyrosine kinase- and Rac1-dependent signaling pathway," EMBO J., 1998, 17:443-454
	ATTT	Hayashi et al., "Binding of the 68-Kilodalton Protein of Mycobacterium avium to ανβ ₃ on Human Monocyte-Derived Macrophages Enhances Complement Receptor Type 3 Expression," <u>Infect.</u> <u>Immun.</u> , 1997, 65(4):1211-1216
	AUUU	Higgins and Sharp, "CLUSTAL: a package for performing multiple sequence alignment on a microcomputer," Gene, 1988, 73:237-244
	AVVV	Higgins and Sharp, "Fast and sensitive multiple sequence alignments on a microcomputer," CABIOS, 1989, 5:151-153
	AWWW	Hildreth and August, "The Human Lymphocyte Function-Associated (HLFA) Antigen and a Related Macrophage Differentiation Antigen (HMac-1): Functional Effects of Subunit-Specific Monoclonal Antibodies," J. Immunol., 1985, 134:3272-3280
	AXXX	Hinnebusch et al., "Role of Yersinia Murine Toxin in Survival of Yersinia pestis in the Midgut of the Flea Vector," Science, 2002, 296:733-735
	AYYY	Hodgson et al., "Rational Attenuation of Corynebacterium pseudotuberculosis: Potential Cheesy Gland Vaccine and Live Delivery Vehicle," Infect. Immun., 1992, 60:2900-2905
	AZZZ	Hondalus et al., "The Intracellular Bacterium Rhodococcus equi Requires Mac-1 To Bind to Mammalian Cells," Infect. Immun., 1993, 61:2919-2929
012	AAAAA	Huang et al., "Parallelization of a local similarity algorithm," CABIOS, 1992, 8:155-165

Examiner Signature	leomoberter.	Date Considered	59/06
EXAMINER: Initials citation of	ensidered. Draw line through citation if no	ot in conformance an	d not considered. Include copy of this form with
next communication to applica	ent.		

ĺ	Substitute Form PTO-1449 U.S. Department of Commerce (Modified) Patent and Trademark Office		Attorney's Docket No. 17023-031001	Application No. 10/665,990	
	Information Disclosure Statement		Applicant Michael A. Apicella et al.		
	(Use several sh	(Use several sheets if necessary)		Group Art Unit	

	Other Documents (include Author, Title, Date, and Place of Publication)				
Examiner Initial	Desig. ID	Document			
	АВВВВ				
1	ACCCC	Hynes, "Integrins: A Family of Cell Surface Receptors," Cell, 1987, 48:549-554			
	ADDDD	Pathol., 1995, 146:944-952			
	AEEEE	Ingalls et al., "The CD11/CD18 Integrins: Characterization of Three Novel LPS Signaling Receptors," Prog. Clin. Biol. Res., 1998, 397:107-117			
	AFFFF	1156			
	AGGGG	Jerse and Rest, "Adhesion and invasion by the pathogenic neisseria," <u>Trends in Microbiology</u> , 1997, 5(6):217-221			
	АННН	Jones et al., "Phospholipase D and membrane traffic: Potential roles in regulated exocytosis, membrane delivery and vesicle budding," <u>Biochim. Biophys. Acta.</u> , 1999, 1439:229-234			
	AIIII	Jones and Walker, "Integrins: a role as cell signalling molecules," J. Clin. Pathol: Mol. Pathol., 1999, 52:208-213			
	AJJJj	Jones et al., "Two Signaling Mechanisms for Activation of α _M β ₂ Avidity in Polymorphonuclear Neutrophils," J. Biol. Chem., 1998, 273(17):10556-10566			
	AKKKK	Jurianz et al., "Complement resistance of tumor cells: basal and induced mechanisms," Mol. Immunol., 1999, 36:929-939			
	ALLŁL	Källström et al., "Membrane cofactor protein (MCP or CD46) is a cellular pilus receptor for pathogenic Neisseria," Mol. Microbiol., 1997, 25:639-647			
	AMMMM	Källström et al., "Cholera toxin and extracellular Ca ²⁺ induce adherence of non-piliated Neisseria: evidence for an important role of G-proteins and Rho in the bacteria-cell interaction," Cell Microbiol., 2000, 2:341-351			
	ANNNN	Verlin and Altechul "Mathada for accepting the statistical significance of malecular acquires			
	A0000	Varing and Altschul "Applications and statistics for multiple high scoring segments in molecular			
	APPPP	Kaur and McDougall, "Characterization of Primary Human Keratinocytes Transformed by Human Papillomavirus Type 18," J. Virol., 1988, 62:1917-1924			
	AQQQQ	Ketterer et al., "Infection of Primary Human Bronchial Epithelial Cells by Haemophilus influenzae: Macropinocytosis as a Mechanism of Airway Epithelial Cell Entry," Infect. Immun., 1999, 4161-4170			
	ARRRR	Kishimoto et al., "The Leukocyte Integrins," Advances in Immunology, 1989, 46:149-182			
	ASSSS	Nature, 1975, 256:495			
A.	ATTTF	Kondo et al., "Phospholipase D Mimics Platelet-derived Growth Factor as a Competence Factor in Vascular Smooth Muscle Cells," J. Biol. Chem., 1992, 267:23609-23616			

	<u> </u>		
Examiner Signature	/ O v	Date Considered	= 10/0/
,	المربيال <i>مال</i> ه المربيل	·	5/19/06
	amal My	L.	
EXAMINER: Initials citation of	Insidered. Draw line through citation if no	ot in conformance and not	considered. Include copy of this form with
next communication to applica	int.		
			Substitute Disclosure Form (PTO-1449)

Substitute Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office		Attorney's Docket No. 17023-031001	Application No. 10/665,990
by Applicant (Use several sheets if necessary)		Applicant Michael A. Apicella et al.	
		Filing Date September 19, 2003	Group Art Unit

	Other Do	ocuments (include Author, Title, Date, and Place of Publication)
Examiner	Desig.	
Initial	ID	Document
De la companya della companya della companya de la companya della	AUUUU	rays," Electrophoresis, 1996, 17:1638-1642
	AVVVV	Kragsbjerg et al., "The effects of live Neisseria minigitidis and tumour necrosis factor- α on neutrophil oxidative burst and β 2-integrin expression," <u>APMIS</u> , 2000, 108:276-282
	AWWWV	Kunkel, "Rapid and efficient site-specific mutagenesis without phenotypic selection," <u>Proc. Natl.</u> <u>Acad. Sci. USA</u> , 1985, 82:488-492
	AXXXX	<u>Enzymol.</u> , 1987, 134:307-382
	AYYYY	Kusner et al., "Regulation of Phospholipase D Activity by Actin: Actin Exerts Bidirectional Modulation of Mammalian Phospholipase D Activity in a Polymerization-Dependent, Isoform-Specific Manner," J. Biol. Chem., 2002, 277:50683-50692
•	AZZZZ	Kusner et al., "Evolutionary conservation of physical and functional interactions between phospholipase D and actin," Arch. Biochem. Biophys., 2003, 412:231-241
	AAAAA	Lawn et al., "The sequence of human serum albumin cDNA and its expression in E. coli," Nucl. Acids. Res., 1981, 9:6103-6114
	ABBBBB	Lehninger, "The amino acid building blocks of proteins," Biochemistry, 2 nd ed., 1975, 73-75
	ACCCCC	Lin et al., "Increased Expression of Luteinizing Hormone/Human Chorionic Gonadotropin Receptor Gene in Human Endometrial Carcinomas," J. Clin. Endocrinol. Metab., 1994, 79:1483-1491
Cytoskeleton," J. Biol. Chem Lynch et al., "Studies of Pori		Cytoskeleton," J. Biol. Chem., 1996, 271:24164-24171
		Lynch et al., "Studies of Porins: Spontaneously Transferred from Whole Cells and Reconstituted from Purified Proteins of Neisseria gonorrhoeae and Neisseria meningitides," Biophys. J., 1984, 45:104-107
	AFFFF	Maisner et al., "Membrane Cofactor Protein (CD46) Is a Basolateral Protein That Is Not Endocytosed," J. Biol. Chem., 1997, 272:20793-20799
	AGGGGG	Maitra et al., "Enrichment of epithelial cells for molecular studies," Nature Med., 1999, 5:459-463
	АНННН	Mandell et al. (eds.), Principles and Practice of Infectious Diseases, 3rd ed., 1990, Churchill Livingstone Inc. (TOC only)
	AIIII	McGee et al., "Mechanisms of Mucosal Invasion by Pathogenic, Neisseria," Rev. Infect. Dis., 1983, 5:S708-S714
	AJJJJJ	McGhee et al., "New Perspectives in Mucosal Immunity with Emphasis on Vaccine Development," Sem. Hematol., 1993, 30:3-15
	AKKKK	McNamara et al., "Toxic phospholipases D of Corynebacterium pseudotuberculosis, C. ulcerans and Arcanobacterium haemolyticum: cloning and sequence homology," Gene, 1995, 156:113-118
	ALLLLL	17ans. Dis. 1989, 10:00-02
	мммм	Determined in Vietro Simulates in Vivo Effects," J. Intect. Dis., 1999, 1/9:124-135
1 /2.	ANNNN	Meinkoth and Wahl, "Hybridization of Nucleic Acids Immobilized on Solid Supports," Anal. Biochem., 1984, 138:267-284

				. 1
Examiner Signature	\overline{V}		Date Considered	-11- /
	ν	ra Bella		5 /9 10-6
	بر مار مراجع	12/12/16/		0/1/00
	<u> </u>	The Box of the second	L	
EXAMINER: Initials cit	ation considered.	. Draw line through citation if no	ot in conformance and no	t considered. Include copy of this form with
next communication to		•		••

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17023-031001	Application No. 10/665,990
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Michael A. Apicella et al.	
		Filing Date September 19, 2003	Group Art Unit 1642 1645

(37 CFR §1.98(0))		2012 10 1-					
Oth	ner Do	ocuments (include Author, Title, Date, and Place of Publication)					
Examiner Desig.							
	ID	Document					
		Mesri et al., "Dual Regulation of Ligand Binding by CD11b I Domain: Inhibition of Intercellular					
AO	poood	Adhesion and Monocyte Procoagulant Activity by a Factor X-Derived Peptide,"," J. Biol. Chem.,					
		1998, 273(2):744-748					
		Meyer, "Pathogenic Neisseriae: Complexity of Pathogen - Host Cell Interplay," Clinical Infectious					
		<u>Diseases</u> , 1999, 28:433-441					
AQ	१०००व	Moll et al., "The Catalog of Human Cytokeratins: Patterns of Expression in Normal Epithelia,					
		Tumors and Cultured Cells," Cell, 1982, 31:11-24 Morse and Bartenstein, "Purine metabolism in Neisseria gonorrhoeae: the requirement for					
AR	RRRR	hypoxanthine," <u>Can. J. Microbiol.</u> , 1980, 26:13-20					
		Mosser and Edelson, "The third component of complement (C3) is responsible for the intracellular					
A	SSSSS	survival of Leishmania major," Nature, 1987, 327:329-331					
A	TTTT	Moulder, "Comparative Biology of Intracellular Parasitism," Microbiol. Rev., 1985, 49:298-337					
AU	וטטטע	Mukherjee et al., "Endocytosis," Physiol. Rev., 1997, 77:759-803					
AV	~~~\	Myers and Miller, "Optimal alignments in linear space," CABIOS, 1988, 4:11-17					
		Nassif and So,, "Interaction of Pathogenic Neisseriae with Nonphagocytic Cells," Clin. Microbiol.					
/ kw	www	Rev., 1995, 8:376-388					
AV	XXXX	Nassif et al., "Interactions of pathogenic Neisseria with host cells. Is it possible to assemble the					
Α.		puzzle?" Mol. Microbiol., 1999, 32(6):1124-1132					
AY	YYYY	Naumann et al., "Host cell interactions and signalling with Neisseria gonorrhoeae," Curr. Opin. Microbiol., 1999, 2:62-70					
		Needleman and Wunsch, "A General Method Applicable to the Search for Similarities in the Amino					
\ A2	ZZZZZ	Acid Sequence of Two Proteins," J. Mol. Biol., 1970, 48:443-453 Obermeier et al., "PAK promotes morphological changes by acting upstream of Rac," EMBO J.,					
	ΑΛΑΛ						
W A	AAAA	1998, 17:4328-4339					
AB	вввв	Oelschlaeger et al., "Unusual microtubule-dependent endocytosis mechanisms triggered by					
1		Campylobacter jejuni and Citrobacter freundii," Proc. Natl. Acad. Sci. USA, 1993, 90:6884-6888 O'Gorman et al., "Decreased Insulin-like Growth Factor-II/Mannose 6-Phosphate Receptor Expression Enhances Tumorigenicity in IEG-3 Cells," Cancer Res. 1999, 59:5692-5694					
\ AC	cccc						
		Expression Enhances Tumorigenicity in JEG-3 Cells," Cancer Res., 1999, 59:5692-5694 Obtails et al. "An Alternative Approach to Decayoligonucleotides as Hybridization Probes by					
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	DDDD	Ohtsuka et al., "An Alternative Approach to Deoxyoligonucleotides as Hybridization Probes by Insertion of Deoxyinosine at Ambiguous Codon Positions," J. Biol. Chem., 1985, 260:2605-2608					
1 1		Parkhill et al., "Complete DNA sequence of a serogroup A strain of Neisseria meningitidis Z2491,"					
_AE	EEEEE	<u>Nature</u> , 2000, 404:502-506					
AF	FFFFFF	Pearson and Lipman, "Improved tools for biological sequence comparison," Proc. Natl. Acad. Sci.					
\^\		<u>USA</u> , 1988, 83:2444-2448					
/ AG	GGGG	Pearson et al., "Using the FASTA Program to Search Protein and DNA Sequence Databases," Meth.					
		Mol. Biol., 1994, 24:307-331 Ponting and Kerr, "A novel family of phospholipase D homologues that includes phospholipid					
/ 4	нннн						
/ [11		residues," Prot. Science, 1996, 5:914-922					
₩		Price and Boettcher, "The Presence of Complement in Human Cervical Mucus and its Possible					
WP 1	AIIIII	Relevance to Infertility in Women with Complement-Dependent Sperm-Immobilizing Antibodies,"					
No.		<u>Fertil. Steril.</u> , 1979, 32:61-66					
Examiner Signatur	re	Date Considered					
Ladmasona 5/9/86							
EXAMINER: Initia	ds citatio	n considered. Draw line through citation if not in conformance and not considered. Include copy of this form with					

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17023-031001	Application No. 10/665,990
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Michael A. Apicella et al.	
		Filing Date September 19, 2003	Group Art Unit 1642—1645

(3/ CFR 91.9	0(0))		
	Other Do	ocuments (include Author, Title, Date, and Place of Publication)	
Examiner	Desig.	Journal (morade Additor, Title, Bate, and I lace of I abhoation)	
Initial ID Document			
minty 🔊		Rabinovitch, "Professional and non-professional phagocytes: an introduction," <u>Trends Cell Biol.</u> , 1995, 5:85-88	
	AKKKKK	Ram et al., "A Novel Sialic Acid Biding Site on Factor H Mediates Serum Resistance of Sialylated Neisseria gonorrhoeae," J. Exp. Med., 1998, 187(5):743-752	
	ALLLLI	Domestial WThe contracting marketing of Communications of Maintaining and another D	
Ramos et al., "The Elevated Natural Killer Sensitivity of Targets Carrying Surface-MMMMM Fragments Require the Availability of the iC3b Receptor (CR3) on the Effectors," 1988, 140:1239-1243			
-	ANNNNN	Ramos et al., "Complement-dependent cellular cytotoxicity: Lymphoblastoid lines that activate complement component 3 (C3) and express C3 receptors have increased sensitivity to lymphocyte-mediated lysis in the presence of fresh human serum," Proc. Natl. Acad. Sci. USA , 1985, 82:5470-5474	
	100000	Relman et al., "Recognition of a Bacterial Adhesin by an Integrin: Macrophage CR3 (ο _M β ₂ , CD11b/CD18) Binds Filamentous Hemagglutinin of Bordetella pertussis," Cell, 1990, 61:1375-1332	
•	APPPPP	Richardson and Sadoff, "Induced Engulfment of Neisseria gonorrhoeae by Tissue Culture Cells," Infect, Immun., 1988, 56:2512-2514	
	AQQQQQ	Robinson, "The role of clathrin, adaptors and dynamin in endocytosis," <u>Curr. Opin. Cell Biol.</u> , 1994, 6:538-544	
	ARRRRRI	Rosqvist et al., "Functional conservation of the secretion and translocation machinery for virulence proteins of yersiniae, salmonellae and shigellae," <u>EMBO J.</u> , 1995, 14:4187-4195	
	ASSSSS	Ross and Densen, "Opsonophagocytosis of Neisseria gonorrhoeae: Interaction of Local and Disseminated Isolates with Complement and Neutrophils," J. Infect. Dis., 1985, 151:33-41	
	ATTTTT	Rossolini et al., "Use of deoxyinosine-containing primers vs degenerate primers for polymerase chain reaction based on ambiguous sequence information," Mol. Cell Probes, 1994, 8:91-98	
	AUUUUU	Schmidt and Hall, "Signaling to the Actin Cytoskeleton," Annu. Rev. Cell Dev. Biol., 1998, 14:305-338	
	AVVVVV	Schoolnik et al., "Gonococcal Pili: Primary Structure and Receptor Binding Domain," J. Exp. Med., 1984, 159:1351-1370	
	wwwww	1985, 4 0:295-300	
	AXXXXX	Sells et al., "Human p21-activated kinase (Pak1) regulates actin organization in mammalian cells," Curr. Biol., 1997, 7:202-210	
	AYYYYY	Seve et al. "Quantitative Analysis of Membrane Cofector Protein (MCP) of Complement" I	
	AZZZZZ	Silverstein et al., "Endocytosis," Ann. Rev. Biochem., 1977, 46:669-722	
	ААААА	Simmons et al., "Vaccine Potential Attenuated Mutants of Corynebacterium pseudotuberculosis in Sheep," Infect. Immun., 1998, 66:474-479	
	Sizemore and Rorke, "Human Papillomavirus 16 Immortalization of Normal Human Ectocervical Epithelial Cells Alters Retinoic Acid Regulation of Cell Growth and Epidermal Growth Factor Receptor Expression," Cancer Res., 1993, 53:4511-4517		
	roccoco	Skoudy et al. "A functional role for extin during Chigalla florage entry into enithelial calle." I Call	
Examiner Signature Sadwarfer(Cr. Date Considered 5 (7/86			

		Receptor Expression," Cancer Res.	, 1993, 53:4511-4517
	rccccc	Skoudy et al., "A functional role fo <u>Sci.</u> , 1999, 112:2059-2068	r ezrin during Shigella flexneri entry into epithelial cells," J. Cell
Examiner Sign	nature	Ladura Beller	Date Considered 5 (5/86
EXAMINER: next commun	Initials citation	on considered. Draw line through citation if	not in conformance and not considered. Include copy of this form with
			Substitute Disclosure Form (PTO-1449)

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17023-031001	Application No. 10/665,990
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Michael A. Apicella et al.	
		Filing Date September 19, 2003	Group Art Unit 1642 (64)

	Other Documents (include Author, Title, Date, and Place of Publication)					
Examiner Initial	Desig.	Document				
Mila	DDDDDD	Smadte et al. "Changing Patterns of Ventin Evergesian During Progressian of Carried				
	AEEEEEE					
	AFFFFFF	Smith and Waterman, "Comparison of Biosequences," Adv. Appl. Math., 1981, 2:482-489				
	GGGGGC	Steed et al., "Intracellular Signaling by Phospholipase D as a Therapeutic Target," Current Pharmaceutical Biotechnology, 2001, 2:241-256				
	ннннн	and Organ Culture Assays, Cim. Microbiol. Rev., 1989, 2:3104-3111				
	AIIIIII	Stewart et al., "T Cell Adhesion to Intercellular Adhesion Molecule-1 (ICAM-1) Is Controlled by Cell Spreading and the Activation of Integrin LFA-1 ¹ ," J. Immunol., 1996, 156:1810-1817				
-	AJJJJJJ	Stocks et al., "CD66-dependent neutrophil activation: a possible mechanism for vascular selectin-mediated regulation of neutrophil adhesion," J. Leuk. Biol., 1995, 58:40-48				
	KKKKKK	Stocks et al. "CD66: role in the regulation of neutrophil effector function." Fur. I Immunol. 1006				
	ALLLLLL	Stryer, "Conformation and Dynamics," Biochemistry, 2 nd ed., 1981, 14-15				
	IMMMMI	Sülz et al., "The expression of α , and β_3 integrin subunits in the normal human Fallopian tube epithelium suggests the occurrence of a tubal implantation window," <u>Hum. Reprod.</u> , 1998, 13:2916-2920				
	NNNNN	Sun et al., "In Vivo Cytokeratin-Expression Pattern of Stratified Squamous Epithelium from Human Papillomavirus-Type-16-Immortalized Ectocervical and Foreskin Keratinocytes," Int. J. Cancer, 1993, 54:656-662				
100	000000	Swanson and Baer, "Phagocytosis by zippers and triggers," Trends Cell Biol., 1995, 5:89-93				
	APPPPPP	Swanson and Watts, "Macropinocytosis," Trends Cell Biol., 1995, 5:424-428				
	QQQQQQ	Science, 2000, 287:1809-1813				
	RRRRRR	Micropiol., 1999, 2:51-55				
	ASSSSS	Biotechnology for increased Gene Expression," Mol. Biotech., 1995, 3:225-236				
	ATTTTT	van Dijk et al., "Exogenous phospholipase D generates lysophosphatidic acid and activates Ras, Rho and Ca ²⁺ signaling pathways," <u>Curr. Biol.</u> , 1998, 8:386-392				
	טטטטטנ	than Affinity Changes," J. Biol. Chem., 1999, 2/4(38):26869-268//				
	vvvvv	Vanderpuye et al., "The Complement System in Human Reproduction," <u>Am. J. Reprod. Immunol.</u> , 1992, 27:145-155				
	www	Violette et al., "Differences in the Binding of Blocking Anti-CD11b Monoclonal Antibodies to the A-Domain of CD11b," J. Immunol., 1995, 155:3092-3101				
di	XXXXX	Vogel and Frosch, "Mechanisms of neisserial serum resistance," Mol. Microbiol., 1999, 32:1133-1139				

Examiner Signature	Date Considered /
Leave Perla	5(9106
EXAMINER: Initials citation considered. Draw line through citation if no	ot in conformance and not considered. Include copy of this form with
next communication to applicant.	
	Substitute Disdosure Form (PTO-1449)

Substitute Form PTO-1449 (Modified)			Application No. 10/665,990
by A	closure Statement pplicant	Applicant Michael A. Apicella et	al.
(Use several sheets if necessary)		Filing Date September 19, 2003	Group Art Unit

	Other Documents (include Author, Title, Date, and Place of Publication)						
Examiner	Desig.						
Initial	ID	Document Document					
M	YYYYY	Wåhlin et al., "C3 Receptors on Human Lymphocyte Subsets and Recruitment of ADCC Effector Cells by C3 Fragments," J. Immunol 1983, 130:2831-2836					
	AZZZZZZ	Waite, "The PLD superfamily: insights into catalysis," Biochim, Biophys. Acta, 1999, 1439:187-197					
	AAAAA	Watarai et al., "Interaction of Ipa Proteins of Shigella flexneri with α ₅ β ₁ Integrin Promotes Entry of the Bacteria into Mammalian Cells," J. Exp. Med., 1996, 183:991-999					
	BBBBBBI	Wen et al., "Interaction of the Gonococcal Porin P 3 with G- and F-Actin," <u>Biochem.</u> , 2000, 39:8638-8647					
	ccccc	Wetzler et al., "Gonococcal Lipooligosaccharide Sialylation Prevents Complement-Dependent Killing by Immune Sera," Infect. Immun., 1992, 60:39-43					
	DDDDDD	Wright et al., "Identification of the C3bi receptor of human monocytes and macrophages by using monoclonal antibodies," Proc. Natl. Acad. Sci. USA, 1983, 80:5699-5703					
	EEEEEE	Würzner, "Evasion of pathogens by avoiding recognition or eradication by complement, in part via molecular mimicry," Mol. Immun., 1999, 36:249-260					
	AFFFFFFF Zhang and Chait, "ProFound: An Expert System for Protein Identification Using Mass Spectrometric Peptide Mapping Information," Anal. Chem., 2000, 72:2482-2489						
	GGGGG	Zipfel et al., "Factor H and disease: a complement regulator affects vital body functions," Mol. Immunol., 1999, 36:241-248					

BEST AVAILABLE COPY

6	4		<u> </u>
Examiner Signature	Date Considered	7/01	
1	row electron	5171	69
EXAMINER: Initials citation considerate communication to applicant.	ered. Draw line through citation if not in conformance and	not considered. Inc	lude copy of this form with

Sheet	1	of	1	

Attorney's Docket No. 17023-031001 Application No. 10/665,990

Applicant Michael A. Apicella et al.

Filing Date September 19, 2003 Group Art Unit 1642-11/6642-11/665

	U.S. Patent Documents						
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA						

	Foreign Patent Documents or Published Foreign Patent Applications							
Examiner	Desig.	Document	Publication	Country or			Trans	slation
Initial	ID	Number	Date	Patent Office	Class	Subclass	Yes	No
P3-	AB	WO 02/60936	08/08/02	PCT				
	AC							

	Other Documents (include Author, Title, Date, and Place of Publication)						
Examiner	Desig.						
Initial	DI	Document					
J. J	AD	GenBank Accession No. AL162756 dated 10/01/00					
	AE	GenBank Accession No. ABP79466 dated 10/10/02					
	AF	GenBank Accession No. AAZ54515 dated 03/21/00					
	AG	GenBank Accession No. ABZ40436 dated 10/10/02					
	АH	GenBank Accession No. AAY75753 dated 03/21/00					
	AI	Edwards et al., "The role of complement receptor 3 (CR3) in Neisseria gonorrhoeae infection of human cervical epithelia," Cellular Microbiology, 2001, 3(9):611-622					
J.	AJ	Edwards et al., "Gonococcal phospholipase D modulates the expression and function of complement receptor 3 in primary cervical epithelial cells," <u>Infection and Immunity</u> , 2003, 71(11):6381-6391					

Examiner Signature

Ladria Bellar

Date Considered

5/9/06

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Attorney's Docket No.: 17023-031001/01025

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Michael A. Apicella et al.

Art Unit : 1642

Serial No.: 10/665,990

Examiner: Unknown

Filed

: September 19, 2003

Title : VAC

: VACCINE AND COMPOSITIONS FOR THE PREVENTION AND

TREATMENT OF NEISSERIAL INFECTIONS

Mail Stop Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

TRANSMITTAL

The following correspondence relating to this application is enclosed for filing:

- 1. Supplemental Information Disclosure Statement (1 page);
- 2. Form PTO-1449 (1 page);
- 3. Copies of Cited References (8 references);
- 4. Copy of International Search Report (4 pages); and
- 5. A Return Postcard.

Please date stamp and return the enclosed postcard. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 6 Danuar 2005

Ann S. Viksnins Reg. No. 37,748

Fish & Richardson P.C., P.A. 60 South Sixth Street, Suite 3300 Minneapolis, MN 55402 (612) 335-5070 telephone

(612) 288-9696 facsimile

60267280.doc

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit

Signature

Lisa M. Becker

Typed or Printed Name of Person Signing Certificate